

**SYRIA TEL COMPANY**

# Customer Churn Prediction and analysis

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# INTRODUCTION

Syria tell is a telecommunication company. It offers telecommunication services across various states and some international plans.



# Problem Statement

SyriaTel is facing a high churn rate, with many customers discontinuing their services or switching to competitors. The company wants to address this issue by developing a customer churn prediction model. By analyzing the dataset, SyriaTel aims to gain insights into factors associated with churn, with the goal of reducing churn rate, increasing customer retention, and improving overall profitability.



## A case of paul

Paul has been a customer for Syria tel for a couple of months however he has abruptly ended his subscription with Syria Tel. We would like to find out why Paul has opted out and what factors may have contributed towards that. We would also like to predict other cases of Paul before they opt out.




## Objectives

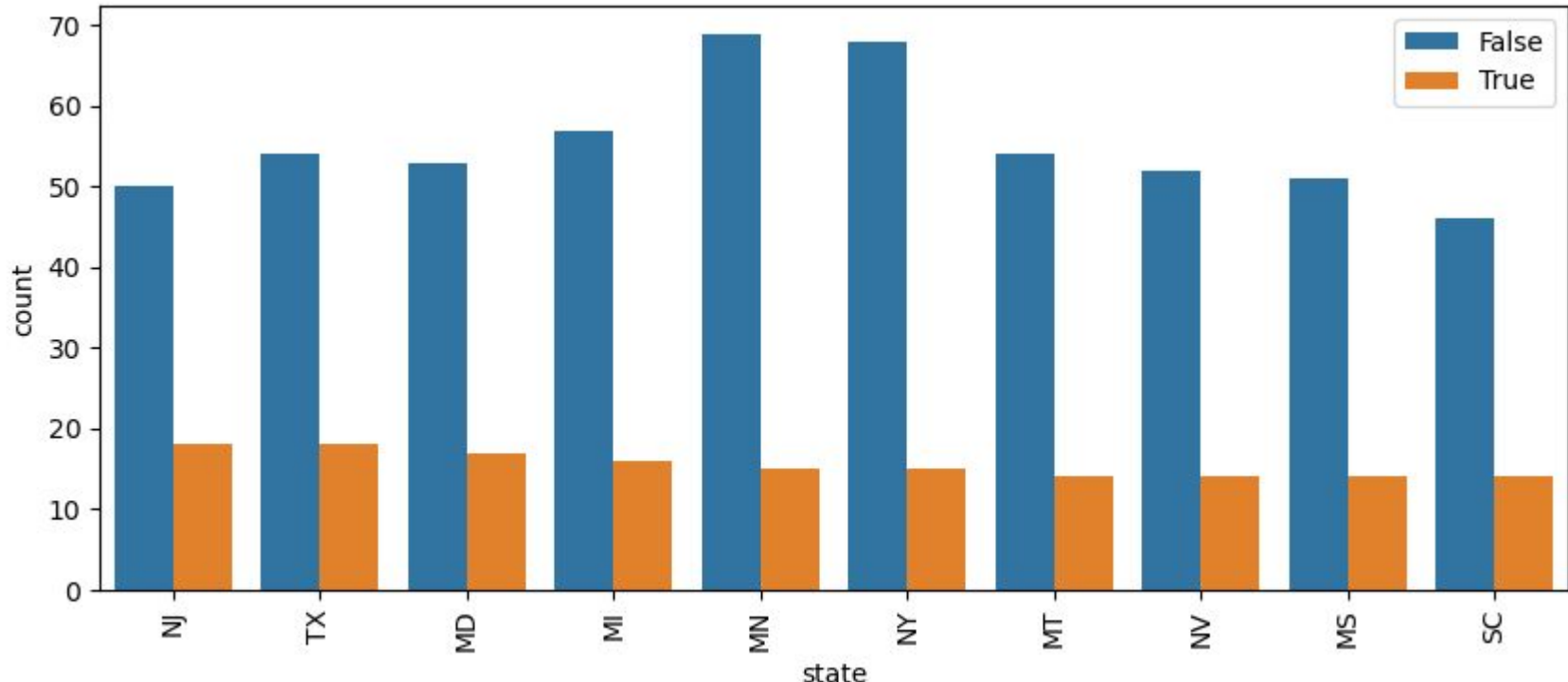
- Identify the factors that are most likely to lead to customer churn.
- Develop a model that can accurately predict which customers are at risk of churning.
- Take proactive steps to retain customers who are at risk of churning.



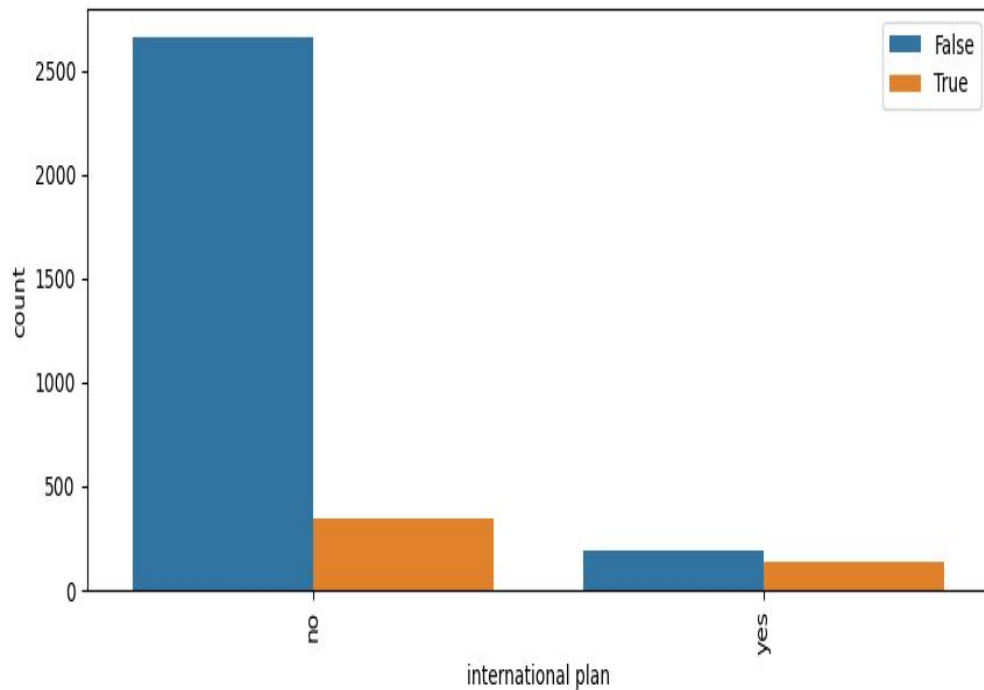
## Project success metrics

- Developing a robust churn prediction model with recall score of 0.8 or better
  - Identifying the key features and factors that significantly contribute to customer churn.
  - Providing actionable insights and recommendations to the telecom company for reducing churn and improving customer retention.
  - Demonstrating the value of churn prediction models in enabling proactive retention strategies and reducing revenue losses due to customer churn.
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# Graph showing to 10 states with highest churn vs non churn



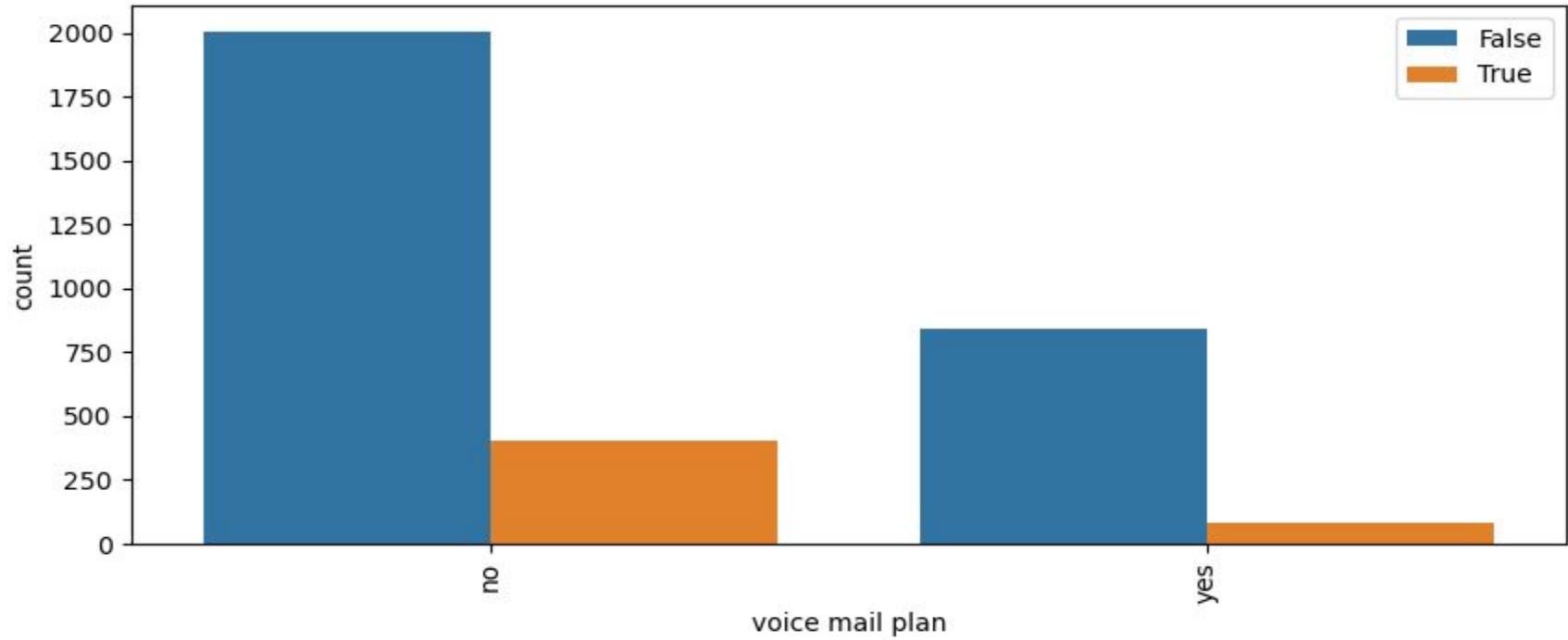
# Churn rate vs international plan



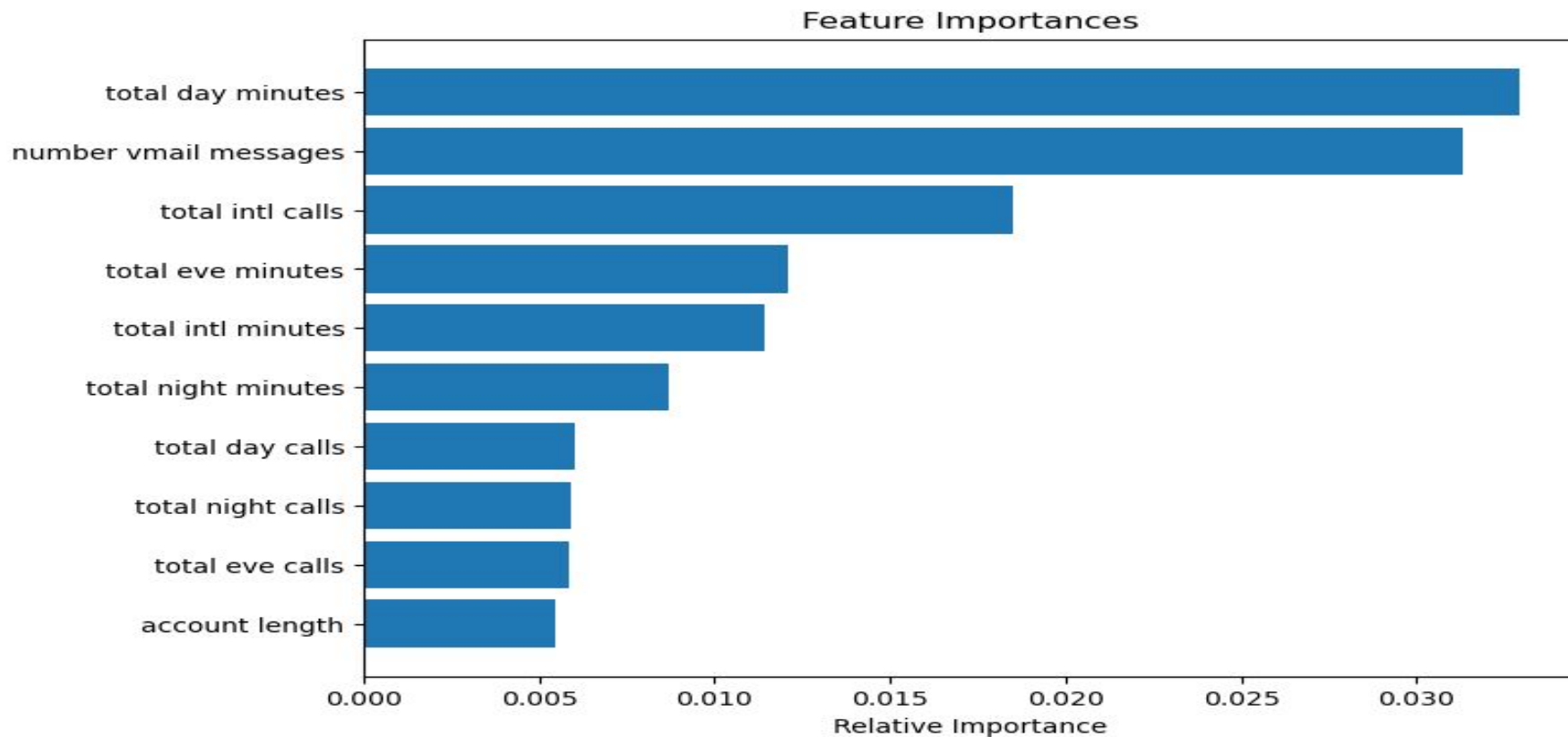
The graph shown majority of people who churned do not have international plans




# Churn with regards to voicemail plans



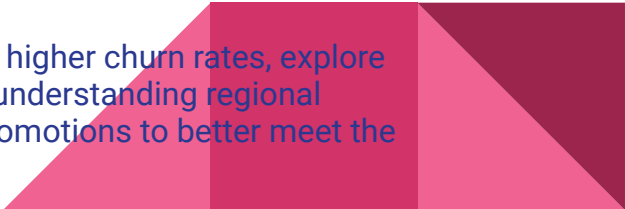
# Factors affecting churning rank by importance



## Conclusions

1. The XGBoost model managed to get a recall of 0.78 which is very close to our success metric. It performs moderately well as a classifier with regards to the features provided. It's overall accurate by 93%.
  2. The most important feature that affects churning rates are total day minutes, number of voicemail messages, total number intl calls and total evening minutes significantly affect churn rates
  3. So far we have a churn rate of 14%. With TX state having majority of the churn rates closely followed by Nj.
  4. Majority of the churn rates are from people without international plans and voicemail plans.
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# Recommendations

1. **Focus on Communication Plans:**
    - Since the number of voicemail messages appears to be a significant factor in churn rates, consider promoting and incentivizing communication plans that include voicemail features. This could involve offering personalized plans with attractive voicemail options.
  2. **International Plans Incentives:**
    - Customers without international plans seem to have higher churn rates. Consider providing targeted incentives or promotions to encourage customers to subscribe to international plans. This could involve discounted rates, special offers, or additional benefits for international calling.
  3. **Customer Engagement Strategies:**
    - Recognizing that total day minutes and total evening minutes significantly affect churn rates, implement customer engagement strategies during these periods. This could involve targeted communication, special offers, or loyalty programs designed to keep customers engaged and satisfied.
  4. **Geographical Targeting:**
    - Given that certain states (e.g., Texas, New Jersey) have higher churn rates, explore region-specific retention strategies. This might involve understanding regional preferences, addressing localized issues, or tailoring promotions to better meet the needs of customers in those areas.
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# Recommendations

## 1. **Retention Offers for At-Risk Customers:**

- Identify customers who exhibit characteristics associated with higher churn rates (e.g., through predictive modeling) and implement targeted retention offers. This could include personalized discounts, exclusive promotions, or enhanced services to encourage at-risk customers to stay.

## 2. **Customer Education:**

- Educate customers about the benefits of having international plans and voicemail features. Highlight the value they bring and how they can enhance the overall communication experience. This could be part of a broader customer education campaign.

## 3. **Feedback Mechanisms:**

- Implement feedback mechanisms to understand customer satisfaction and reasons for churn. This could involve surveys, customer feedback forms, or customer service interactions. Use this feedback to make informed decisions and improvements.



## Further steps

- Continuously monitor the performance of the predictive model, and regularly update and refine it based on new data and changing patterns. This ensures that the model remains accurate and relevant for identifying potential churn cases.

